Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
For
King's Grant Water Company

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
June 2004

Table 1: Public Water System (PWS) Information

PWS NAME	King's Grant Water Company
PWS Address	839 Newport Avenue
City/Town	Attleboro, MA 02703
PWS ID Number	4211001
Local Contact	John Brady
Phone Number	(508) 761-8531

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	01G	347	1392	Moderate
Well #2	02G	347	1392	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas
5. Appendix

1. Description of the Water System

King's Grant Water Company draws its water from a groundwater aquifer in the Blackstone River Basin. King's Grant Water Company has two wells, Well #1 (4211001-01G) is the primary well and Well #2 (4211001-02G) is used as a back-up well. Both Well # 1and Well #2 have Zone Is of 347 feet and IWPAs of 1392 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone Is and IWPAs.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The King's Grant Water Company treats its water with potassium hydroxide for corrosion control. Potassium hydroxide raises the water's pH to non corrosive levels. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **non-water supply activities in Zone I;**
2. **golf course;**
3. **residential development; and**
4. **roads.**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of moderate threats within the Zone I and IWPA.

1. **Zone Is –** Currently, the wells do not meet DEP's Zone I regulations, which allow only water supply related activities in the Zone I and require that the land within the Zone I be owned or controlled by the public water system. King's Grant Water Company owns 97% of their Zone I, however, on the edge of the Zone I are private residential homes and a small portion of a local road. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Educate private homeowners on source protection issues including septic system maintenance, hazardous materials handling and lawn care.
- ✓ Restrict access to the Zone I area with gates and locks.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Potential Concern
Home	Yes	Yes	Moderate	fertilizer, pesticides, septic system and hazardous materials
Golf course	No	Yes	Moderate	fertilizers, pesticides and fuel storage
Residential development	No	Yes	Moderate	runoff from lawns, septic systems, underground/above ground storage tanks
Roads	Yes	Yes	Moderate	stormwater runoff, spills

*** For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

2. **Golf Course –** There is a golf course in the northeastern portion of the IWPA. Activities associated with golf courses that are potential threat to drinking water quality include fertilizer and pesticide use and bulk fuel storage. By implementing Beat Management Practices (BMPs) the golf course can reduce the potential risk of contaminating water supplies.

✓ Educate the golf course owners about water supply protection topics relating to golf course operation and maintenance. Be sure to include Integrated Pest Management (IPM) information.

3. **Residential Development –** There is medium density residential development within the IWPA.

Recommendation:

✓ Educate residents on drinking water source protection. Include information on landscaping, hazardous materials handling and septic system maintenance.

4. **Roads –** Local roads are common within the IWPA. Runoff and spills from roads can contaminate public wells.

Recommendation:

✓ Map stormwater drainage within the IWPA and inspect drainage periodically for spill contamination.

✓ Continue to maintain contact with the Fire Department about spills.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. King's Grant Water Company should review and adopt the key recommendations above and the following:

Priority Recommendations:

Zone I:

✓ Keep additional non-water supply activities out of the Zone I.

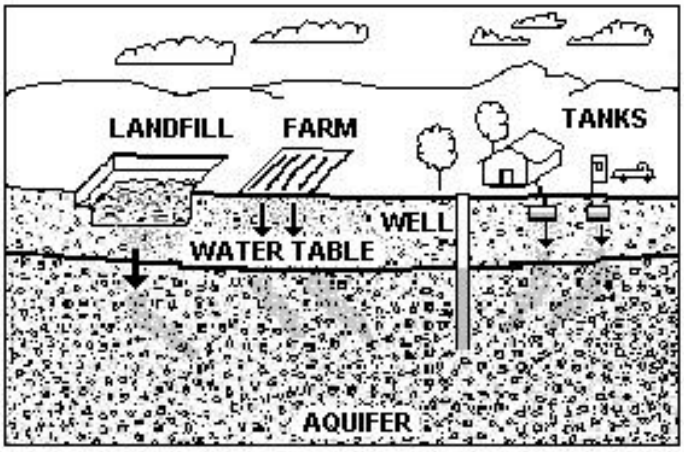

Figure 1: Example of how a well could become contaminated by different land uses and activities.

✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.

✓ Prohibit public access to the well and pumphouse by locking facilities.

✓ Continue regular inspections of the Zone I. Look for illegal dumping or evidence of vandalism.

✓ Use Best Management Practices (BMPs) and restrict activities that could pose a threat to the water supply.

✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

Training and Education:

✓ Post drinking water protection area signs at key visibility locations.

✓ Provide source protection information to golf course

For More Information:

Contact Isabel Collins in DEP's Lakeville Office at (508) 946-2726 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier and town boards.

owners.

- ✓ Work with your community to ensure that stormwater runoff at the road is directed away from the well and is treated according to DEP guidance.

Planning:

- ✓ Work with local officials in town to include the facility's IWPA in the Aquifer Protection District Bylaw and to assist you in improving protection.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under that program. For additional information, please refer to DEP's web site. Other funding opportunities are described in *Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation* at http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

5. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Industrial Floor Drains Brochure
- Source Protection Sign Order Form
- Integrated Pest Management information